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Engineering faculty helps create new book for introductory course

Creating a new textbook to accompany an expanded Engineering 100 course kept two School of Engineering staffers very busy this summer.

Along with the help of professors from every department, Marni Kendricks and Maxine Woolsey edited a new book for the Introduction to Engineering course. The book includes chapters from each of the six departments within the School of Engineering: chemical, computer science, electrical, geological, mechanical and civil.

"For the undecided student, as well as the incoming engineering student, [the course] is the perfect opportunity to introduce them to engineering," said Kendricks, assistant to the dean for undergraduate advising. "We wanted to give them a taste of each discipline."

Kendricks has taught the course for four years. The book, *Introduction to Engineering: A Projects-based Text* (University Publishing, 2005), begins with an introduction to general engineering before diving into the six departments.

The introduction to engineering course began as a way to introduce high school students to engineering. The class as an outreach program was a vision of Dr. Michael Ponton, who has since left Ole Miss. For college students, the course provides a detailed

Erin Chester, a student in the Engineering 100 class successfully builds a crystal radio.

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From the Dean's Office

Engineers apply the laws of nature to design and create devices and systems that are useful to mankind. In so doing, they improve the quality of life, grow the economy and broaden mankind's horizons. It is no exaggeration to say that a good part of the story of civilization is the story of advances in engineering and technology.

The United States is the world's leading superpower due largely to its preeminence in engineering innovation in the last 50 years. In 1957, the successful launch of Sputnik I by the Soviet Union jolted the nation. To meet the challenge, Congress enacted the National Defense Education Act in 1958, which provided the motivation and support for many students to major in engineering. The support enabled our engineering schools to produce a large number of superb graduates. This generation of engineers was instrumental in sending men to the moon, in leading the nation into unparalleled economic prosperity and in helping to win the Cold War.

In the last decade, however, this success was taken for granted and complacency has taken hold. There has been a 50 percent decrease in interest in science and engineering among high school students. We produce about half of the engineers we need and must import the other half. In contrast, other countries have been investing heavily in engineering education. This is evident from statistics on the ratio of engineering degrees to total degrees awarded annually. This ratio is 40 percent for China, 30 percent for Central Europe, 20 percent for Japan and only 5 percent for the United States. Unless this trend is reversed, the United States will soon lose its competitive edge in engineering innovation.

To maintain our leadership position in engineering innovation, we need to interest more young men and women in entering the engineering profession. This is not easy because in high schools, while students can study mathematics, physics, chemistry, humanities and social sciences, a course directly on engineering is usually not available.

At UM, we have taken steps to remedy this situation. For the last several years, we have been offering ENGR 100, Introduction to Engineering, to high school students in our summer sessions. This course, prepared and taught by Ms. Marni Kendricks in collaboration with faculty members, is a project-based course in which fundamental engineering concepts are discussed and explored.

In fall 2005, we offered this course not only to local high school students and university students on site, but also to interested high school and community college students through distance-learning technologies. In this issue of the *Ole Miss Engineer*, you'll read about the success of the course, its textbook and other key efforts the school is developing to recruit the next generation of Ole Miss'—and America's—engineers.

We hope to make students aware that engineering is an interesting field to study and that the profession of engineering is exciting, rewarding and extremely important for the nation's economic prosperity and security. We hope that you, our alumni, will help us communicate this to the best and brightest young minds in your community.

Kai-Fong Lee

Siren song of engineering playing continuously in class designed to attract students to profession

Faculty and staff in the School of Engineering are getting creative in an effort to increase enrollment.

This year, enrollment increased more than 9 percent because of Engineering 100, a brand new approach to introducing the field and its professions to Mississippi's high school students, as well as to Ole Miss students who have not declared a major.

"Across the country, engineering enrollment is declining," said Marni Kendricks, assistant to the dean. "This is our innovative effort to reverse that trend in our part of the world."

The effort is working. In the past, Engineering 100 was part of a summer college program for high school students. This year, the class has been increased to a full 3-hour class for Ole Miss students and a math or science elective for high school students. In August, nearly 60 Ole Miss students and students from five high schools enrolled in the class.

Washington School Students

Kendricks and educational outreach specialist Maxine Woolsey worked to get students from Oxford and Lafayette high schools to enroll in the class with Ole Miss freshmen. Students at DeSoto Central High School in Southaven, Pillow Academy in Greenwood and Washington School in Greenville take the class via television and computer connection.

The course is not only an introduction to Ole Miss engineering but also an introduction to a possible career option, Kendricks said.

"We're teaching it as an introduction to engineering as a degree and as a career," she said. "Yes, we want students to consider studying engineering at Ole Miss, but more importantly, we want students to consider the field of engineering, period."

***'The course is not only an introduction to Ole Miss engineering but also an introduction to a possible career option.'*—Marni Kendricks**

Kendricks and Woolsey are especially excited about getting high school students interested in studying engineering.

"They are the future of the program," Kendricks said. "But another aim of the class is to attract undecided liberal arts majors already at Ole Miss into majoring in engineering."

DeSoto student with electrical engineer

Woolsey agreed: "Many students are not exposed to engineering in high school. Some don't understand the field. The class explains that engineering is a practical application of science and math, so if they're pretty good at both subjects, they might want to consider a career in engineering."

Woolsey said that community

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Kim Thames

Message from Engineering Student Body President

Mission: Finding young Ole Miss engineers

This fall, students and faculty have visited several high schools to recruit bright, motivated and talented seniors and juniors to our School of Engineering. I had the opportunity to participate in that effort during College View night at my alma mater, the Mississippi School for Mathematics and Science in Columbus.

As an alum of the UM engineering school, you can help recruit prospective Ole Miss engineers by identifying talented and promising high school students. By helping to create an intelligent and diverse student body, alumni can enhance Ole Miss' reputation of excellent education available in a small engineering school. By recommending outstanding students, you can make sure that UM is in touch with the best and brightest candidates.

Also, your willingness to represent your alma mater favorably to qualified students, counselors, parents and teachers helps increase visibility for the School of Engineering.

Dean Lee visits high school students to discuss the benefits of choosing a career in engineering.

A Few Ideas for Locating Future Ole Miss Engineers

- Watch newspapers for students who have received academic awards or who are involved in science fairs, community service and/or leadership activities.
- Ask family, friends, neighbors and colleagues about any high school students and their plans for college.
- Contact high school counselors and science and math teachers.
- Of course, we are also very interested in your high school student(s)!

I have been amazed at how easy and rewarding it is to talk with potential students about considering Ole Miss for engineering education. We hope that you will help us identify sharp, gifted high school students who would be good prospects for Ole Miss engineering by sending their contact information to the Office of Admissions.

Thank you for your continued support.
Kim Thames
Engineering Student Body President

Siren song, continued from Page 3

and campus response to the new offering has been gratifying.

"With Engineering 100, we've had positive support on both ends, in the high schools and within the School of Engineering," Woolsey said. "Dean Lee helps by visiting high schools to give students in physics, calculus or other upper-level sciences classes a pep talk about engineering. The entire program is a huge success. Students seem to enjoy the lectures."

In fact, eight students from DeSoto Central came to Ole Miss in September to participate in the lectures in person while on fall break.

"It felt cool to be at Ole Miss in class," said senior Ian Withrow. "It felt like I was in college for 50 minutes. I wasn't used to it; college professors are a lot different from high school teachers."

Becca Hopkins of Southaven said she is considering a career in the field because of the class.

"Engineering is like all of your high school science and math classes combined into one class," said Hopkins, a DeSoto Central senior. "The class shows you all different aspects of engineering—everything that can be done with it. It's an amazing field."

Because of the positive response, Kendricks, Woolsey and Lee want to expand the program to Tupelo and Philadelphia high schools, and the Mississippi School for Mathematics and Science in Columbus.

"By offering this course, we had hoped to increase the School of Engineering's enrollment by 10 percent," Kendricks said. "We believe we can do that next semester. Now we want to introduce engineering as a degree and a career to more schools in Mississippi. We want to expose more students to this fascinating field."—*Deborah A. Purnell*

Renovation of Old Chemistry draws near, Campaign for Engineering advances

Renovation of the Old Chemistry building could begin by late summer or early fall 2006 as the Campaign for Engineering continues to advance.

"Right now we are in the programming stage," said University Architect Ian Banner. "This stage involves the determination of who is going where and how much space they will need.

"We are also assessing the condition of the existing roof, walls and mechanical systems in the building," Banner said. "In some cases, the programming stage lasts anywhere from four to six months. When the program is set, the project architects and their consultants will need another six months or so to complete the design drawings and construction documents."

The McCarty Group of Tupelo has been contracted as project architects. Plans call for student study areas, a distance-learning classroom, faculty offices, faculty lounge, conference rooms, and more laboratory space and classrooms. A new dean's suite will be added thanks to a $100,000 gift from Jim Barnette (BSCE 59) of Corpus Christi, Texas.

After the programming and design stages are completed, the project will be let for bids, a contractor will be hired and construction will begin, Banner said.

In late 2004, the Mississippi Legislature approved $13 million in bond revenue for physical improvements. Of that, $4 million goes to renovate Old Chemistry, slated to become part of the new Engineering Complex along with Carrier and Anderson halls. About $1 million in private funds are also available, and fund raising for the effort continues. A civil engineering alumnus who wished to remain anonymous donated $100,000 last December to name a civil engineering laboratory.

Details about phase one of Old Chemistry renovations are posted in front of the building.

> ***'After the programming and design stages are completed, the project will be let for bids, a contractor will be hired and construction will begin.'***
>
> ***—University Architect Ian Banner***

"I want to thank all those alumni and friends who have participated in the campaign," said Dean Kai-Fong Lee. "Their contributions reflect their commitment to Ole Miss and the future of the School of Engineering. We are grateful for their support during this exciting and critical time for our school."

In addition to the complex, plans are on the drawing board to renovate the old Wal-Mart building in Oxford as an Innovation Center. The facility will house research laboratories for the departments of electrical and civil engineering, and the Mississippi Mineral Resources Institute.

"I look forward to a time when professors, research faculty, and graduate and undergraduate students have the space to conduct the research they want," said Dr. Alexander Cheng, chair of civil engineering. "The Campaign for the School of Engineering is making that possible."

Cheng's vision is shared by Dr. Allen Glisson, electrical engineering chair, and Dr. James Woolsey, MMRI director.

"To stay competitive, the School of Engineering must improve its infrastructure and continue to bring innovation to its educational programs," said Glisson.

"We're going to have plenty of space for parking—that's for sure," said Woolsey.

For more information on the campaign, contact Tom Black, assistant to the dean for advancement, at 662-915-5932, or visit www.olemiss.edu/depts/engineering_school/campaign. To make a gift online through The University of Mississippi Foundation, visit www.umf.olemiss.edu/secure/donorform_eng.asp.—*Edwin Smith*

Engineers use their skills to help Mississippi pull through Katrina and beyond

Engineers are a decidedly hands-on bunch, far removed from the ivory tower academic stereotype.

So as Hurricane Katrina threatened the state—and then dealt a deadly blow—UM engineering professors and graduate students went to work, toiling alongside emergency management officials around the clock to predict the storm's damage, save lives and assist in recovery.

Their work continues, now in the cleanup phase.

Civil engineering professor Chris Mullen, whose expertise is earthquakes not hurricanes, was among the first to volunteer. As director of the university's Center for Community Earthquake Preparedness, Mullen was equipped with two years of experience working with the Mississippi Emergency Management Agency on a statewide hazard mitigation plan for natural and man-made disasters. Using HAZUS-MH, the FEMA software, he helps planners predict damage to essential facilities before a catastrophic event.

UM engineering graduate students work on the 'GIS Bus' at the Emergency Operations Center in Jackson following Hurricane Katrina.

The day before Katrina made landfall, Mullen was in Jackson, taking advisories from the National Hurricane Center and plugging the information into HAZUS. "Close to landfall, I ran the HAZUS simulation to estimate wind damage from the storm," Mullen said. "The scale of the event was evident from our runs."

Because HAZUS does not factor storm surge into the prediction, Mullen called on Talbot Brooks, a professor at Delta State University who specializes in geospatial data, to help with the final piece of the picture. They overlapped Brooks' digital elevation model of the coast with the projected maximum storm surge,

Before (left) and after Hurricane Katr

and Mullen then fed that information into HAZUS to predict which facilities would be affected. That news was not encouraging: Schools, highways and even an emergency operations center were determined to be directly in the surge's path.

Many areas, such as Waveland, were predicted to be ravaged by wind even without the storm surge, Mullen said. "But combined with the seas, they got a double whammy."

That "double whammy" spanned the entire Mississippi coast, and MEMA appealed for help.

Four days after the storm hit, a five-member UM team of geologists and geological engineers, including faculty and graduate students—all trained in geographic information systems, or GIS—set up camp at the state emergency headquarters in Jackson. Led by Greg Easson, director of UM's Geoinformatics Center, they were armed with global positioning units, research-grade laptops and, most importantly, years of expertise in interpreting satellite data and turning it into information that rescuers and relief workers can use.

The UM team worked alongside volunteers from Mississippi State University, state and local agencies, and Giving International Service Corps volunteers in a 24-hour operation to provide GIS support to federal and state emergency response agencies.

'Our first priority when we arrived was helping the Coast Guard with search-and-rescue efforts.'

—Dr. Greg Easson

"Our first priority when we arrived was helping the Coast Guard with search-and-rescue efforts," Easson said. His team includes graduate students Seth Broadfoot, Lance Yarbrough, Hal Robinson and Justin Janaskie.

When rescue calls came in, search-and-rescue teams were given physical addresses, but with most street signs and structures gone, there was little hope of finding exact locations. Using GIS software and a database of street names, Easson and his team provided Coast Guard helicopters with latitude and longitude coordinates of the street addresses in a matter of seconds to help them locate victims.

"Someone would come to us every three or four minutes," said Broadfoot. "There were people needing dialysis, pregnant women going into labor, heart attacks. Minutes counted in those situations. They couldn't wander around trying to find them."

The rescue teams were very appreciative. "They acted like this was the best thing that ever happened, and we knew we were having an impact," Broadfoot said.

Working 12-hour shifts nonstop from an RV packed with equipment,

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Before (left) and after Hurricane Katrina in Gulfport, Miss.

School of Engineering earns continued accreditation

All five baccalaureate degree programs at the School of Engineering have gained reaccreditation for the maximum duration allowed by the Accreditation Board of Engineering and Technology, the nation's accrediting agency for engineering education.

"This is the culmination of several years of preparation involving program objectives, their assessment and continuous improvement, faculty qualifications, facilities and institutional support," said Dean Kai-Fong Lee.

The review was conducted in fall 2004 by a visiting team selected by ABET. Team members consisted of department chairs and faculty from other accredited engineering programs and representatives from government and industry.

The visitation team identified school strengths in the areas of administrative leadership, dedication of the faculty, student-to-faculty ratio, research growth and support from alumni and the advisory board, Lee said.

Engineering is the third-oldest academic program at the University of Mississippi.

With 828 students, the School of Engineering offers bachelor's, master's and doctoral degrees in chemical, civil, electrical, geological and mechanical engineering, and computer science. A bachelor's degree in general engineering is also offered.

'This is the culmination of several years of preparation involving program objectives, their assessment and continuous improvement, faculty qualifications, facilities and institutional support.'*—*Dean Kai-Fong Lee

Headquartered in Baltimore, ABET is a nonprofit organization devoted to the improvement of engineering and technology education throughout the world.—*Edwin Smith*

Katrina, continued from Page 7

the UM volunteers spent much of their "time off" preparing data for the next day's work. After catching a few hours' sleep in a conference room at the Institutions of Higher Learning offices, they were back on the job by 5 a.m.

Besides search-and-rescue efforts, the team prepared detailed geospatial maps, pinpointing shelters and water distribution points, closed roads, power outages, cellular coverage, aid stations, personnel locations and myriad other details. All were updated constantly as new information was received.

"It's a high-energy, high-stress environment," Janaskie said. "But because of this experience, using GIS in emergency management really interests me as a field to go into."

As long as a month after the hurricane struck, the UM geoinformatics team continued to work on site with MEMA. Joining the team in the meantime to relieve some of the original members were doctoral students Elizabeth Johnson and Henrique Momm.

While all have since returned to campus, their work with FEMA and MEMA continues in the cleanup, Easson said. Using satellite images with precise elevation information from before and after the storm, researchers can estimate the volume of rubble that must be cleared.

"We're just now getting into the really important part of this disaster, which is the recovery and redevelopment of the coast," Easson said. "Our analyses will have a role to play in that process as well."

Mullen's work isn't over, either. He's part of a FEMA team of structural engineers tasked with evaluating buildings in the devastated area and assessing why predictors failed to have "a better understanding of the storm's effect on the [structural] environment on the coast."

Responding to the worst disaster in the state's history required state and federal agencies to rely on all kinds of outside help. Ole Miss engineering professors, students and staff stepped up to the task.

MEMA Director Robert Latham said people such as Mullen, Easson and the team of graduate students helped tremendously in response and recovery efforts.

"It was the outstanding support we received from our universities and colleges that proved to be an invaluable asset in our ability to respond and recover from this catastrophic event," Latham said.—*Angela Moore Atkins*

Professor's work wears away at questions about soil erosion

An Ole Miss engineering professor has garnered national attention for his work on reducing water pollution from soil erosion into streams.

Dr. Garey Fox, assistant professor of civil engineering, won the USDA Research Initiative Award, one of only 12 awarded nationally, in June.

The three-year, $330,000 grant provides Fox with field and laboratory equipment, a stipend and tuition for a doctoral student, and funds for an undergraduate research assistant who will work with the USDA-ARS National Sedimentation Laboratory in Oxford.

Fox conducted his research with Drs. Glenn Wilson, Eddy Langendoen and Andrew Simon at the Sedimentation Lab. They studied the effects of subsurface flow at Little Topashaw Creek and plan to continue the study at Godwin Creek, both in northern Mississippi. Fox and his collaborators set up laboratory studies using lysimeters, special soil columns that can simulate the two main causes of subsurface soil erosion.

One cause of erosion occurs when water levels rise in the stream, allowing water to seep into the surrounding stream bank. When water levels drop, the water in the stream bank flows back into the stream, which causes the sediments to move and erode. The other cause of subsurface flow erosion is precipitation.

Dr. Garey Fox

"The results will help us to understand if subsurface erosion contributes significantly to the amount of sediment in streams as compared to other stream bank erosion mechanisms such as stream flow," Fox said.

Downstream flooding, poor water quality and destroyed habitats are a few of the problems caused by excess sediments. Sediments arrive in stream water most often by erosion of stream banks in agricultural areas.

"This grant will enhance the reputation of the department and the school as a place where quality research serving the USDA is conducted," said Dr. Alex Cheng, chair of civil engineering. "As a public educational institution, we are committed to work with and to assist governmental agencies to improve public welfare. In this regard, Dr. Fox has been a highly innovative and motivated researcher."

After earning his undergraduate and graduate degrees at Texas A&M University, Fox moved to Colorado State to work on his doctoral degree. While there, he decided that he wanted to work in a smaller department where he could know the names of his colleagues and students.

"I wanted to teach, and do research and be in a small department," Fox said. "Ole Miss fit all of those."—*Emilie Bramlett*

Get your new, improved engineering polo shirt

As an alumnus of the Ole Miss School of Engineering, you can do many different things to attract talented young people to the school.

You can visit local high schools and career fairs to talk to potential students directly or contribute to the Campaign for Engineering to improve the school's facilities and attract students you've never met.

Perhaps the easiest task: Wear this shirt.

There's a reason the best fashion designers use logos on their clothing: free advertising. By wearing this shirt, you're spreading the word about one of the best-kept secrets in engineering education—Ole Miss, your alma mater.

As an added bonus, they're pretty good-looking. Engineering Student Body President Kim Thames ordered two styles, one for men and one for women. They come in red or navy, with the school's logo embroidered on the left side. Small, medium, large and extra-large sizes are $30, double extra-large is $32.

To get yours, e-mail Thames at kethames@olemiss.edu or fill out and mail in the form on the back cover. Wear your shirt with pride.

Teaching his students to think—not just spit back information is goal of Outstanding Faculty Engineering Award winner

His students call him enthusiastic, understanding and an excellent teacher who makes his class comfortable. And this year, Dr. Paul Scovazzo's classroom qualities helped him win the Outstanding Engineering Faculty Award.

The award is based on a consensus of the School of Engineering's faculty, students and alumni.

"Because it's a combination of faculty and students, it's a great honor," said Scovazzo, assistant professor of chemical engineering.

The award recipient is chosen in a process that involves evaluating faculty members' performance in teaching, research and service. Faculty in each department nominate two colleagues. Because teaching plays a larger role than service and research, the department's juniors, seniors and graduate students vote on the two nominees. After the vote, the finalist from each of the six departments is given to an awards committee, which selects the winner, who receives $2,000 and a plaque from the Engineering Alumni Chapter.

Scovazzo enjoys teaching, a fact his students experience on a daily basis. The environment at Ole Miss allows him to really get to know his students.

Dean Kai-Fong Lee (left) and Dr. Paul Scovazzo

"I like working with the undergrads. Being a small department, there is a lot of interaction with the students," Scovazzo said. "Here, teaching is not only emphasized but respected."

In the classroom, Scovazzo likes to teach his students more than just engineering. He wants his students to do more than spit back information. He wants them to think.

"I try not to teach formulas. I try to teach [my students] to visualize what's happening and think," Scovazzo said. "Don't worry about making an A in the class."

Scovazzo, who has been at Ole Miss for 2-1/2 years, also acknowledges the importance of balance in leading a successful life. He has several hobbies that help keep his life in balance: travel and backpacking. This year alone he has been to Puerto Rico, Wales, the Smoky Mountains and New England. Because he earned his Ph.D. at the University of Colorado, he had plenty of opportunity to backpack in the Colorado wilds.

For now, Scovazzo is content to teach, and travel when he can. He appreciates his award and the monetary gift it came with, but wishes for one more thing—a parking space in the Circle.

"I'm still working on that," Scovazzo said, grinning.—*Emilie Bramlett*

Uddin in Brazil

Dr. Waheed Uddin (left) presents a University of Mississippi pennant to Dr. Manasses Claudino Fonteles, rector of Mackenzie University in São Paulo, Brazil, after delivering an invited lecture there at the 2005 International Symposium on Pavements Recycling. The lecture, which won the symposium's Best Paper award, was co-authored with Kanok Boriboonsomsin and Sergio Garza, who earned their doctoral degrees from UM in 2004 and 2003. The paper was published in the January-May 2005 issue of the International Journal of Pavements. Uddin is associate professor of civil engineering and director of the Center of Advanced Infrastructure Technology at UM.

Faculty, staff awards

Dean Kai-Fong Lee established four awards in 2001 to honor outstanding achievements in research and service. Recipients receive $1,000 and a plaque, both provided by the Woods Order. The research awards are based on journal publications, conference papers and presentations, external research funding and graduate student supervision. The Service Award is given to faculty members who both enhance the reputation of the School of Engineering and serve students well. The Staff Award recognizes outstanding performance by the unsung heroes who keep the school running smoothly.

Senior Faculty Research

Dr. Ahmed Kishk, professor of electrical engineering

Junior Faculty Research

Dr. Garey Fox, assistant professor of civil engineering

Faculty Service

Dr. Atef Elsherbeni, professor of electrical engineering

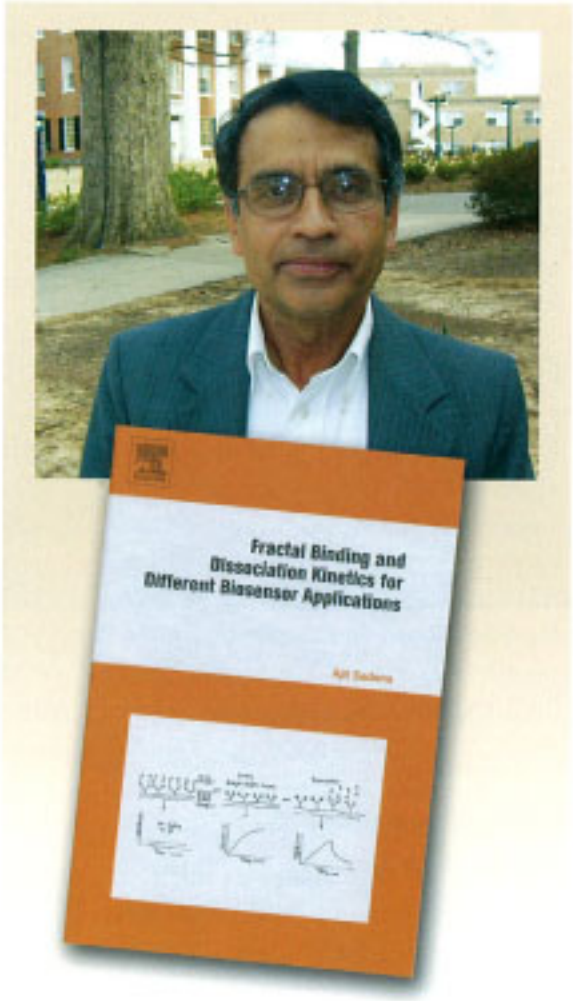
Staff

Cathy Grace, marine projects coordinator

Biosensor research offers hope for early detection of diseases

A chemical engineering professor's kinetic studies on biosensor surfaces may advance the early detection of diabetes, arthritis and lupus.

For the past decade or so, Dr. Ajit Sadana has observed and analyzed the rapidity with which analytes are detected on biosensor surfaces. The scope of his research has included the detection of glucose, fatty acid binding protein and environmental contaminants, to name a few. His latest book, *Fractal Binding and Dissociation Kinetics for Different Biosensor Applications* (Elsevier, 2005), is the third in a series he has written on the subject.



Dr. Ajit Sadana and his latest book

"The early detection of biomarkers that lead to the onset of disease will considerably assist in its management and control," said Sadana. "Autoimmune diseases such as cancer, systemic lupus erythematosus, arthritis, diabetes mellitus and cardiac-related illnesses can hopefully be alleviated and better-managed by the early detection of precursors that lead to these diseases by biosensors."

Sadana noted that biosensor applications in healthcare are not new, but few people are involved with the kinetic aspect of their development.

"Through my research I want to assist in developing biosensors that are faster, cheaper and reusable. That's my goal—to help make a niche for better biosensors," he said.

Sadana added that his chemical engineering approach to healthcare-related biosensors has generated criticism from some in the medical profession who seem to feel that he is out of his element.

"Looking at diseases from another angle gets me a lot of criticism, but that's OK. I believe this knowledge holds promise for both the medical profession and the pharmaceutical companies," he said. "Anything—however small—that helps in managing these insidious diseases is worth the effort. Plus, my books seem to be selling pretty well. I'm already working on the next one."—*Edwin Smith*

Electrical engineering professor wins award and trip to India

The trip to India was long, but winning the accolades of his peers was worth the 26-hour flight.

Fan Yang, assistant professor of electrical engineering, won the Union of Radio Science's Young Scientist Award for his work on novel surface wave antennas, which have potential to improve wireless communications.

He submitted a paper detailing his antenna research in January and found out in June that he had been selected. At the conference, Yang presented his paper, received a certificate for his accomplishments and even got to meet India's chief executive.

"It was a very good trip—a little far away, but I got to meet with the president of India," Yang said. "I got his signature and had photos taken with him. We couldn't bring our own cameras, so I'm still waiting on the photos."

'Dr. Yang's receipt of an URSI Young Scientist Award is a well-deserved recognition of his professional contributions to electrical engineering in the area of radio science.'

—Dr. Allen Glisson

Yang earned his Ph.D. in 2002 from UCLA. He joined the Ole Miss department after finishing his post-doctoral research.

"Ole Miss has a very strong research program, not only in electrical engineering but also in antennas," Yang said. "It is a very beautiful campus, and the people in the department are very nice."

A native of China, Yang stays busy teaching, conducting research and supervising the research of two graduate students. He would like to see his work on wireless communications antennas used in different environments.

"Dr. Yang's receipt of an URSI Young Scientist Award is a well-deserved recognition of his professional contributions to electrical engineering in the area of radio science," said Dr. Allen Glisson, chair of electrical engineering.—*Emilie Bramlett*

New book, continued from Page 1

overview of what engineers do. The hope is to entice undecided liberal arts majors with math and science skills to consider majoring in engineering.

Originally the textbook was just a workbook for the high school course. Now in its third edition and as the text for a 3-hour university class, the book has taken on a more polished look and includes more detailed chapters.

"Marni focused on the math problems and homework assignments, but I got to do all the illustrating and fun stuff," said Woolsey, educational outreach specialist. "We needed the pictures and graphics to make the book more interesting for the students. It is much more likely that they'll read a page if there is an interesting picture on it."

The course and book are designed

Marni Kendricks

Maxine Woolsey

to increase enrollment in engineering classes in colleges throughout the state of Mississippi.

"Today we produce about half the engineers we need, and we have to import the other half," Dean Kai-Fong Lee said in the preface to the textbook. "In contrast, other countries have been investing heavily in engineering education. Unless this trend is reversed, the United States will soon lose its competitive edge in engineering innovation."

The book, which is partially paid for with a $100 lab fee that includes all project materials, was funded by Dean Lee.

"The dean told us to do a good job with this project and to make it a high priority, so we did," Kendricks said. "We tried to keep costs down as much as possible but still produce a text of which we can all be proud."

Support from the dean and professors in all engineering departments made putting the book together an enjoyable learning experience for both Kendricks and Woolsey.

"Many who have looked through the book have asked to buy a copy, because typical engineering texts are usually not quite this intriguing," Kendricks said. "We hope to make the next edition even more student- and reader-friendly."—*Emilie Bramlett*

'Can You Hear Me Now?'

Paper on cellular system outages named best at ISCC conference

Going to Spain to present his research paper at the International Symposium on Computing and Communications conference provided one UM engineering professor with a surprise when he arrived home.

Dr. Mustafa Matalgah, assistant professor of electrical engineering, knew the research paper was important to the future design of cellular wireless networks, but he was not expecting it to win any awards.

When Matalgah arrived back in Oxford, he learned his presentation won the conference's Best Paper Award.

"The criteria used in selecting the paper for the award was based on the quality of the contents and on the presentation performance," Matalgah said. "I learned about the award after I came back from the conference, and it was really surprising because I was not expecting it."

The paper, "Outage Probability Analysis in Cellular Systems with Noisy Weibull-Faded Lognormal-Shadowed Links," analyzes and provides solutions to problems related to outages in cellular networks corrupted by additive noise.

"The electrical engineering department was very happy to learn that Dr. Matalgah had received a Best Paper award at the conference," said Dr. Allen Glisson, chair of electrical engineering. "The award indicates the quality of the professional contributions being made in Dr. Matalgah's research work."

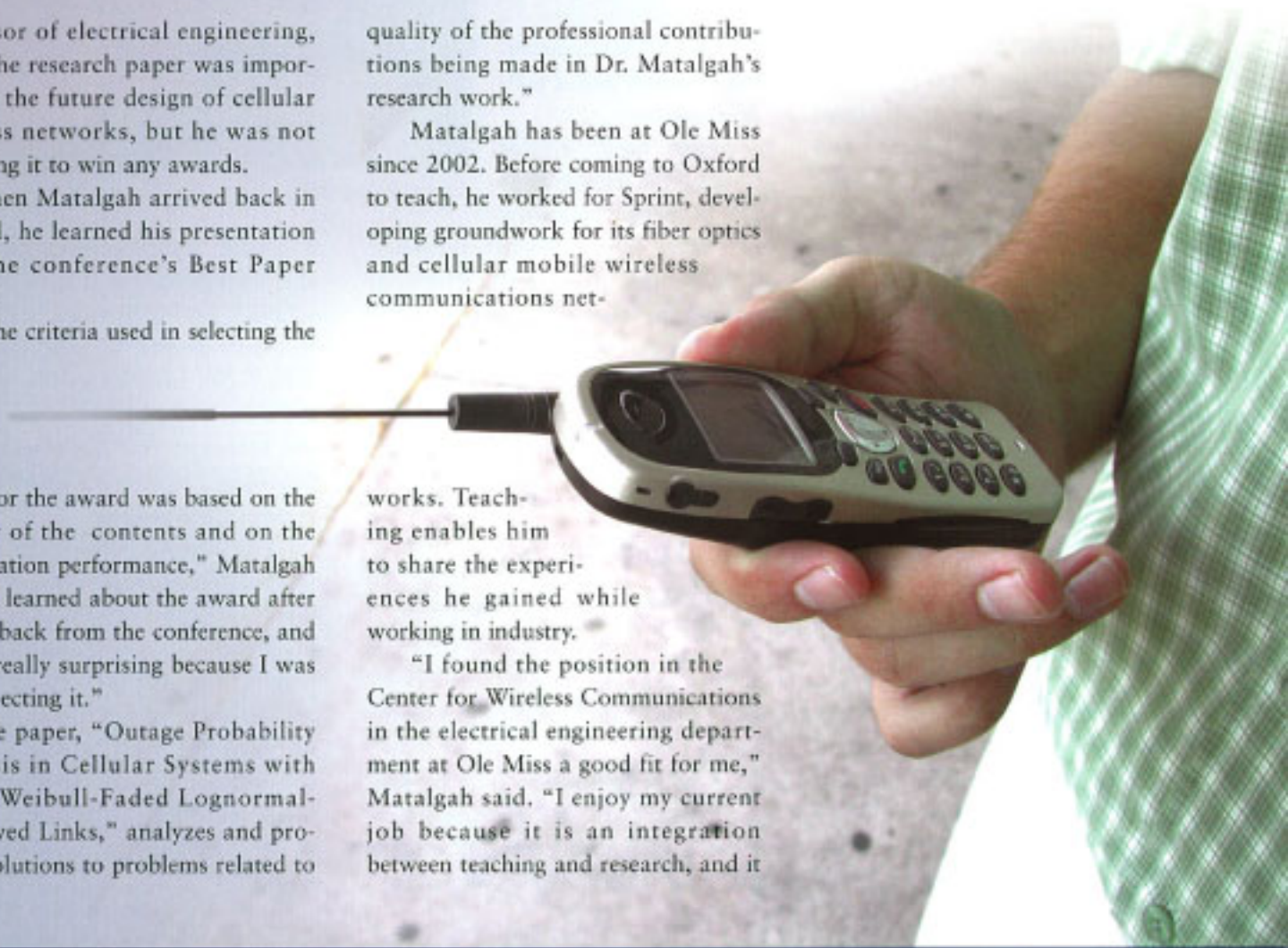
Matalgah has been at Ole Miss since 2002. Before coming to Oxford to teach, he worked for Sprint, developing groundwork for its fiber optics and cellular mobile wireless communications networks. Teaching enables him to share the experiences he gained while working in industry.

"I found the position in the Center for Wireless Communications in the electrical engineering department at Ole Miss a good fit for me," Matalgah said. "I enjoy my current job because it is an integration between teaching and research, and it involves a lot of interaction with my colleagues and students in the department."

One of his students is Mahmoud Ismail from Egypt, a graduate student who helped Matalgah with his research.

Matalagah holds a doctoral degree in electrical and computer engineering from the University of Missouri-Columbia. He plans to continue teaching and conducting research at Ole Miss.—*Emilie Bramlett*

Before coming to Oxford to teach, Dr. Matalgah worked for Sprint, developing groundwork for its fiber optics and cellular mobile wireless communications networks. Teaching enables him to share the experiences he gained while working in industry.



Engineering graduate from Sri Lanka is poised to change the world

When Kaumudi Atapattu graduated in May 2005, the UM School of Engineering bade farewell to a national scholarship winner, a student leader and an accomplished researcher.

But it's much better to lose Atapattu to the University of California at Berkeley than it was for her professors to contemplate losing her a few months ago, when the civil engineering major went home to Colombo, Sri Lanka, for the holidays.

When news of the deadly Southeast Asian tsunami began reaching the U.S. the day after Christmas, her professors and friends panicked a bit.

"I tried to e-mail her and make sure she was OK," said her professor and thesis adviser Dr. Garey Fox. "We were definitely worried about what was going on in Sri Lanka and whether she and her family were OK."

Atapattu and her family were fine, if a bit shaken by the experience. Because the tsunami isolated the country, Atapattu didn't realize how bad the situation was until she finally checked her e-mail and had scores of messages from worried friends and professors in Mississippi.

"It was very touching and overwhelming, the outpouring of concern," Atapattu said.

Atapattu's graduation would be noteworthy even if she hadn't recently survived tragedy. In her four years at Ole Miss, Atapattu was president of the International Students Organization; president of Chi Epsilon, the civil engineering honor society; winner of the David Arnold Engineering Award, given to graduates who demonstrate leadership, character and scholarship; a Taylor Medalist; an honors student who earned a 4.0 GPA in her engineering courses; and a resident assistant.

Kaumudi Atapattu

Her most recent honor is the biggest: She's one of five national winners of the John A. Focht Chi Epsilon scholarship, given to the best civil engineering students in the country.

"I'm thrilled," Atapattu said. "I don't even know what to say about that."

Fox, her professor, said it for her.

"Each civil engineering department in the country has one student that they select for this scholarship," Fox said. "The Stanfords, the MITs, the Columbias, all those types of schools, put one student out there, their best student. Winning this scholarship is an amazing accomplishment, not only for her, but for the prestige she brings to our department, the School of Engineering and The University of Mississippi."

Fox and Atapattu spent months working on Atapattu's senior honors thesis, which uses chemical emulsions to capture radioactive dust from dirty bombs. Atapattu presented the project, sponsored by the U.S. Army Corps of Engineers, at four different scientific conferences. This summer, it was presented at a Department of Homeland Security conference in Boston.

'The Stanfords, the MITs, the Columbias, all those types of schools, put one student out there, their best student. Winning this scholarship is an amazing accomplishment.'*—*Dr. Garey Fox

"Kaumudi easily had enough for a master's thesis," Fox said. "And she did this in nine months, while involved in all her other activities."

Despite the success of this project, Atapattu plans to concentrate her graduate studies on water resource management, which she'd eventually like to practice for world aid groups in economically disadvantaged countries. She'd also like to use her training to help her native Sri Lanka continue its recovery from the devastating tsunami.

"I think it would be really fantastic to live at home for a few years and work there," Atapattu said. "My main goal is to travel and experience a lot of different cultures while making a difference in the world."

Atapattu said her busy college experience at UM prepared her well to meet any challenge.

"I've learned so much outside the classroom as well," she said. "I learned time management, people skills, how to put projects and events together. And being involved with the International Students Organization and meeting so many different students meant I got an idea of what another country might be like without being there."

Atapattu's world traveling began this summer, when she went to China with UM mechanical engineering professor Dr. Sam Wang for a water resources conference. Then it was off to California for graduate school.

"We're so proud of Kaumudi and all that she has accomplished," said Dr. Alex Cheng, civil engineering department chair. "With her leadership, strength of character and scholarship, she demonstrates everything an Ole Miss engineer should be."—*Angela Moore Atkins*

Mississippi Engineering Society recognizes senior whose love of science goes back to elementary school

Max Woolsey, a recent UM electrical engineering graduate, has been one of Oxford's best young scientists since he measured the strength of electrical currents as a first-grader at Bramlett Elementary School.

Max Woolsey and Dean Kai-Fong Lee

More recently, his talents were recognized on the state level when Woolsey was named the Mississippi Engineering Society's Outstanding Senior at UM. The society chooses one student from UM and one from Mississippi State to honor each year.

"As an undergraduate student, Max established an outstanding academic record and received many honors," said Engineering Dean Kai-Fong Lee. "At the same time, he has a variety of experience and interests outside the classroom."

For example, the dean said, the summa cum laude graduate and honor society president is also a top-notch car mechanic and welder. He also has some expertise in computational geophysics and helped develop software for processing and visualizing geophysical data.

In the electrical engineering department, Woolsey won the outstanding student award twice—once as a sophomore and once as a junior. Woolsey plans to continue his studies at Ole Miss as a graduate student in electrical engineering.

Woolsey was an impressive student at Oxford High School; his science experiments there earned him three trips to the Intel International Science and Engineering Fair. He also earned the rank of Eagle Scout.

Woolsey is the son of Dr. Bob Woolsey, director of UM's Mississippi Mineral Resources Institute, and Maxine Woolsey, a former Oxford School Board president.

> ***'As an undergraduate student, Max established an outstanding academic record and received many honors. At the same time, he has a variety of experience and interests outside the classroom.'***
>
> ***—Dean Kai-Fong Lee***

The Mississippi Engineering Society was founded in 1939. Its members include professional engineers, interns, engineering students and graduate engineers from all disciplines.—*Angela Moore Atkins*

Academic honorary Phi Kappa Phi gives 3 engineering students the nod

Lawrence Paul Bennett Jr. and Hunter Herring Howell, both of Oxford, and Adam Wallace Powers of Dickson, Tenn., were initiated into Phi Kappa Phi academic honor society in April. Membership in Phi Kappa Phi, chartered at UM in 1959, is one of the university's highest honors.

Bennett, an electrical engineering graduate, is the son of Paul Bennett and Nina Bennett. He is a member of Eta Kappa Nu and Tau Beta Pi honor societies.

Lawrence Bennett Jr.

Hunter Howell

Adam Powers

Howell, now a senior chemical engineering major, is the son of Kent and Marijean Howell. He is a member of the Sally McDonnell Barksdale Honors College and the UM band.

Powers, now a senior electrical engineering major, is the son of L.F. Powers. He is a member of Tau Beta Pi and Golden Key honor societies.

Engineering's Taylor Medalists head to graduate school

Natalie Jean Rose of Hazlehurst and Kaumudi Atapattu of Colombo, Sri Lanka, were awarded Taylor Medals, UM's highest academic award, in April. The Marcus Elvis Taylor Memorial was established in 1904 and is awarded to no more than 1 percent of the student body each year.

Both Rose and Atapattu are in graduate school: Atapattu at the University of California at Berkeley and Rose here at Ole Miss.

Rose, a geological engineering graduate who also won an international scholarship from a mining organization, is the daughter of Michael H. and Kathleen M. Rose. She was a member Tau Beta Pi engineering honor society and vice president of Phi Kappa Phi honor society.

Atapattu, a civil engineering graduate, also won the Arnold Award and a national scholarship from Chi Epsilon, the civil engineering honor society. She was also a member of the International Students Organization and was a resident assistant.

Natalie Jean Rose

Kaumudi Atapattu

Ole Miss hosts conference devoted to computing

Marking the 30th anniversary of computing education on campus, Ole Miss hosted the third annual Consortium for Computing Sciences in Colleges Mid-South Conference.

Approximately 140 faculty, students and others attended the regional conference, which is devoted to issues related to computing education. Faculty and student participants from computer science, management information systems and other fields attended.

"CCSC:MS is a conference dedicated to improving the quality and visibility of computing-related, college-level education in the Mid-South region," said Conrad Cunningham, chair of computer and information science and this year's conference chair.

Cornell University's David Gries (right) delivered the keynote address at the Consortium for Computing Sciences conference chaired by Conrad Cunningham.

Its annual conference not only provides valuable information on innovations within the computing world but also enables the publishing of professional papers related to computing education.

'As a comprehensive institution, it was our opportunity to learn more about the needs of the region we serve and to highlight what we have to offer the region.'—Dr. Conrad Cunningham

"It is a gathering of computing educators who share what they have learned with each other, learning from one another, and building relationships that can strengthen computing education and research in the region," he said.

The Consortium for Computing Sciences was created to provide computing science faculty at small colleges with opportunities to further their education without spending a lot of money. Over the years the consortium has grown to include the faculty of larger institutions.

This year's conference offered panel discussions, tutorials, information sessions and paper presentations, with topics ranging from introductory-level computer science "courseware" to URSA (Universal Robotic Service Architecture).

The keynote speaker was David Gries, professor of computer science and associate dean of engineering at Cornell University. Gries spoke about teaching program development.

Also speaking at this year's conference was Bill Rayburn, chief executive officer of FNC Inc., which is headquartered in Oxford. Rayburn spoke about the challenges and opportunities of starting a computing-related business with a national market in a small town.

"As a comprehensive institution, it was our opportunity to learn more about the needs of the region we serve and to highlight what we have to offer the region," Cunningham said.—*Emilie Bramlett*

Yahoo!

Young alumnus scores job with top Internet company

One of the world's leading Internet companies has taken on an Ole Miss engineering graduate as a new employee.

Nilesh Dosooye, a computer science alumnus, is one of Yahoo!'s newest technical Yahoo!s, which he says is basically a software engineer.

"Yahoo! is a great company to work for," Dosooye said. "I love what I do. It feels very gratifying to know that the products I am building will be used by millions of [people] globally. Also, many of the leaders in various technology fields work here, so it's a great group of peers to work with."

Dosooye works on the Yahoo! Education and Yahooligans team that designs and implements new software for their respective Web sites.

Nilesh Dosooye

Dosooye earned both his undergraduate and master's degrees in computer science from Ole Miss, finishing the program in 2001. After graduating, he worked at St. Jude Children's Research Hospital in Memphis, Tenn., as a software engineer in the bioinformatics department. He was at St. Jude for three years before moving to Sunnyvale, Calif. He has been with Yahoo! since July.

While at Ole Miss, Dosooye started the International Students Organization, which is one of the largest organizations on campus. He is from Mauritius, a small island off the coast of Madagascar.

"I have so many great memories from Ole Miss," Dosooye said. "I guess what I remember the most are the people. Everybody whom I encountered in my five years at Ole Miss was just great. Even though I was a foreigner, I always felt at home in Oxford."—*Emily Powers*

Federal highway official visits civil engineering students

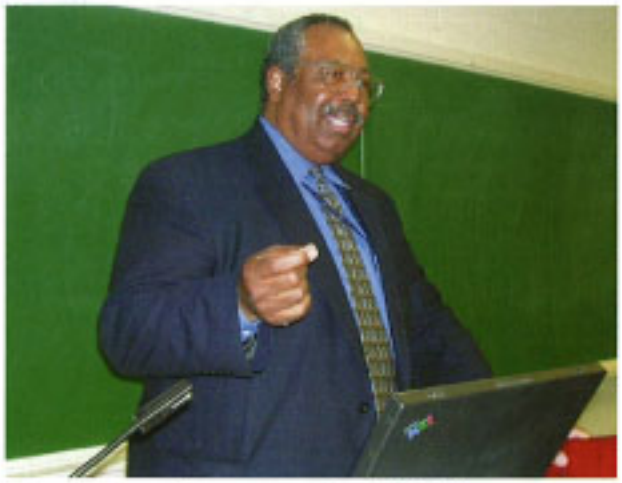
Donald Jackson, U.S. Department of Transportation value engineering coordinator, spoke to civil engineering students in the spring Construction Engineering and Management course taught by civil engineering professor Dr. Waheed Uddin.

Uddin, director of the Center for Advanced Infrastructure Technology, is a member of the Value Engineering Task Group established by the USDOT Federal Highway Administration. Value engineering looks for ways to lower costs of large projects without compromising their structural integrity and safety. The National Highway System Act of 1995 mandated value engineering for projects of $25 million or more and for bridge projects of $20 million.

The group deals with overbudgeted projects or projects with high costs, complex designs and environmental implications.

"We look at engineering and economics," Uddin said. "Not just initial cost, but life cycle cost of the project, and benefits."

Uddin is the only university representative on the committee. Ole Miss is among only a few universities in the United States that teach value engineering.—*Emilie Bramlett*



Donald Jackson lectures to students in CE417.

It Is Rocket Science

Graduate heads Test Laboratory at Marshall Space Center

The lessons Pedro "Pete" Rodriguez learned while earning his doctorate at Ole Miss extended far beyond the classroom.

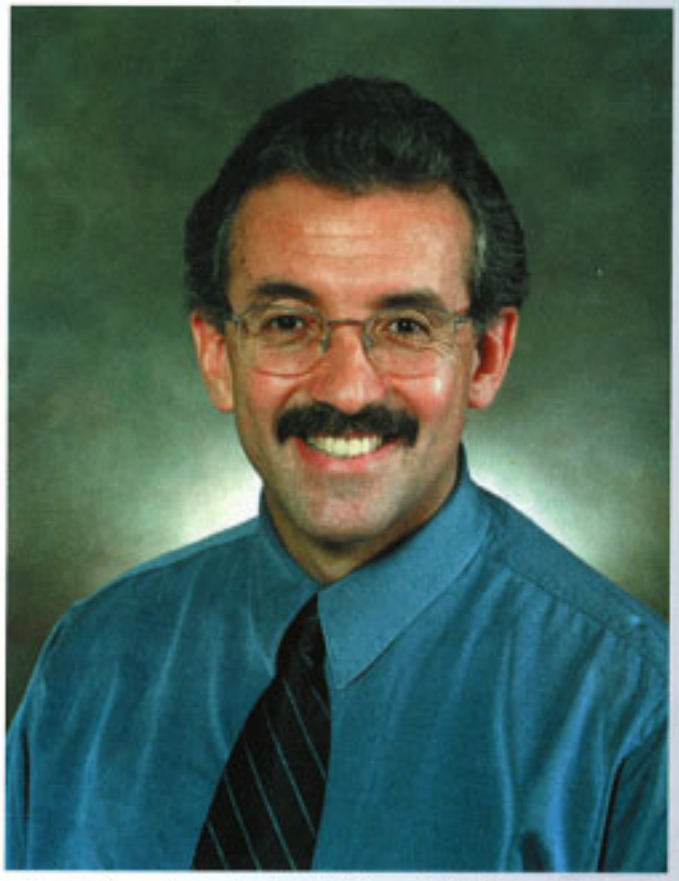
Rodriguez, named the director of the Test Laboratory in the Engineering Directorate at NASA's Marshall Space Flight Center in 2004, completed the Ph.D. civil engineering program in 1997 and has never forgotten the community and campus atmosphere that helped him graduate.

"The people made me feel very comfortable and they were very welcoming," Rodriguez said. "The campus is such a historic place. I remember taking afternoon walks around campus. It was so peaceful."

Getting to Oxford proved to be a long and difficult road for Rodriguez. After graduating from the University of Puerto Rico in 1976 with his bachelor's degree, he was offered a job at the Marshall Center. While there, he worked on the space shuttle project. He stayed until 1979, when he left to build engines for fighter planes in West Palm Beach, Fla.

In 1981, Rodriguez came back to Huntsville, where he worked for six months before being offered a chance to return to NASA. He earned his master's degree at the University of Alabama in Huntsville in 1982. His adviser, Dr. Bob Hackett, became his friend and mentor. However, the two lost touch and it took many years for them to reconnect. Rodriguez was ready to go back to school after his master's degree and found his mentor at Ole Miss.

"Ever since I started at NASA, I wanted to get my Ph.D. I never thought I could do it," Rodriguez said. "I thought I was not smart enough, but I found out that smarts are not as important as the will to finish it."



Pete Rodriguez keeps the Marshall Space Flight Center's Test Laboratory running smoothly.

Donald Cole, then working in the Graduate School, remembers Rodriguez as a hardworking, conscientious student. Cole was a part of Rodriguez's dissertation committee.

"The combination of industry and academia is always a good concept," Cole said. "He was a nontraditional student who had to find time to leave Huntsville and take classes and come to Oxford when the committee summoned him. I knew how tough it was for him, and he always worked hard."

Rodriguez still remembers how he felt at graduation.

"I was numb, relieved. If I hadn't graduated then, I'm not sure I could've continued," he said.

Rodriguez oversees research at the Marshall Center's Test Laboratory, where engineers and researchers perfect complex space and launch systems in propulsion, structures, and launch and flight environments. Researchers conduct structural and environmental tests on the critical space hardware components and assemblies of external tanks, solid rocket motors and solid rocket boosters. They also perform propulsion tests on solid rocket motors and develop new technology for rocket engines and components.

The Columbia accident added one more area of interest to the long list of research and experiments conducted at the lab.

"After the Columbia accident, we became very heavily involved in understanding the mechanics of foam and ice release from hardware exposed to cryogenic temperatures," Rodriguez said.

Rodriguez's role in all this testing and developing is to keep the Test Laboratory running smoothly. His job is to ensure that it provides excellent test facilities and to oversee the $35 million annual budget. Even

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Doctoral candidate wins Young Scientist Award

Months before earning his doctoral degree in engineering, Islam Eshrah has won an international Young Scientist Award for research presented at a conference in Pisa, Italy.

The International Union of Radio Science awarded the honor to Eshrah, who becomes "Dr." Eshrah in December, for his paper on a numerical technique used in the analysis of electromagnetic scattering from arrays of conducting objects.

"Islam has been an outstanding student in our electrical engineering graduate program," said department chair Dr. Allen Glisson. "This award is yet another confirmation of his contributions while a student and his future potential."

Honoring his aptitude for research, Eshrah also won a Raj Mittra Travel Grant to attend the joint international symposium of the IEEE Antennas and Propagation Society and URSI.

Taking advantage of his time in Pisa, Eshrah was able to see the Leaning Tower and take a trip to Florence.

"Going to Pisa to present my work was a unique experience," Eshrah said. "I got to meet people working in the field from all over the world and got feedback from people of different backgrounds."

A native of Cairo, Egypt, Eshrah came to Oxford in 2002 to begin the doctoral program. His father is the general counselor of the Federation of Egyptian Chambers of Commerce, and his mother previously worked in the National Bank of Egypt.

"I chose Ole Miss because the electrical engineering department is very active in electromagnetic research, and the professors are well-known in the scientific community," Eshrah said.

'I chose Ole Miss because the electrical engineering department is very active in electromagnetic research, and the professors are well known in the scientific community.' —Eshrah Islam

Already a faculty member at Cairo University, Eshrah is staying in Oxford another year to work on postdoctoral research.—*Emilie Bramlett*

Everitt Awards recognize students' performance

The outstanding work of electrical engineering students John Ashmore and Max Woolsey earned them some well-deserved recognition.

The William L. Everitt Awards honor undergraduate senior electrical engineering students with interests in the areas of communications and computers. Presented by the International Engineering Consortium, the Everitt Awards are named for the late University of Illinois engineering dean, considered one of the top two electrical engineering educators of the century.

"John and Max are excellent students, and I am very pleased that their performance during their undergraduate electrical engineering program has been recognized through this award," said Dr. Allen Glisson, professor and chair of electrical engineering.

Glisson nominated the two students for the award, which validates both students' years of hard work and studying.

"I felt honored," Ashmore said. "It was good to get feedback on all the hard work that I've done."

"John and I both worked very hard to get the most out of our undergraduate years here, and being presented such an award lets us know that we are on the right track," Woolsey said.

A graduate of New Albany High School, Ashmore came to Ole Miss after two years at Northeast Community College. He had planned to major in computer science but after talking to several students, he changed his mind and studied electrical engineering.

He is working full time for Radiance Technologies Inc. while attending graduate school at Ole Miss.

Woolsey, an Oxford native, has begun his first semester as an electrical engineering graduate student at Ole Miss, where he is focusing his research on numerical methods and high-performance computing. He graduated from Oxford High School in 2000.—*Emilie Bramlett*

There's no rest in retirement for chemical engineering alum who worked 43 years as statistician at DuPont

Rudy Kittlitz may have retired, but his workload just keeps reinventing itself. Kittlitz wouldn't have it any other way.

"My children say, 'Dad, we thought you retired,'" said Kittlitz. "My reply is, 'I'm going to wear out versus rusting out.'"

From the inception of his 43-year career with DuPont, the 1957 University of Mississippi alumnus adapted to whatever demands came with the job description. Rather than view change as an obstacle to be overcome, Kittlitz has seen within it opportunities to grow wiser and richer.

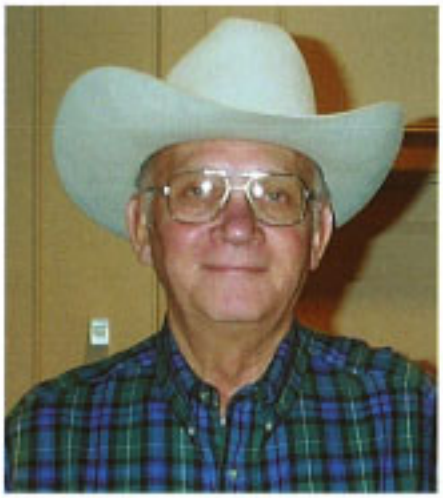
"Immediately after receiving my bachelor's degree in chemical engineering from Ole Miss, I went to work in the research and development area of DuPont in Wilmington, Del.," said Kittlitz. "In presenting the data collected, I found more tests needed to be done."

As fate would have it, a supervisor informed Kittlitz he would need to run a statistical analysis using the "T" test—something he was clueless about.

"From that point, I began studying statistics very heavily, teaching myself how to apply them to the work in which we were engaged. That's how I became an expert in my field," he said.

Over the duration of his career with DuPont, the jovial statistician alternately worked in Delaware and Tennessee. While living in Chattanooga, Kittlitz discovered a love for teaching and went to work as an adjunct professor at the University of Tennessee.

He also became a member of the American Society for Quality in 1972.



Rudy Kittlitz

Over the years, Kittlitz has worked as a certified quality engineer and reliability engineer, and executive regional director; chaired various committees; and co-authored three books. He received the 1989 William G. Hunter Award (statistics division) and the ASQ Board of Directors Testimonial Award in 1995, 1999 and 2001.

Kittlitz is a member of the American Statistical Association, National Association of Parliamentarians and the US TAG to ISO/TC69, which he chairs. His name is found in *Who's Who in America, Who's Who in Science and Engineering, Who's Who in Finance and Industry* and *Who's Who in the World.*

Kittlitz has traveled the globe many times, most notably as a Citizens Ambassador to Russia and Ukraine in 1991. In addition to being a presenter at various ASQ meetings around the country, he has made statistical presentations to DuPont sites in Europe, Canada and Mexico.

"Rudy always was a good student and pretty outgoing," said Dr. Russell Aven, UM professor emeritus of chemical engineering. "He has come back and talked to our students regarding his career at DuPont. His presentation impressed students and faculty alike."

Aven's recollections of Kittlitz are echoed by Dr. Frank Anderson, UM associate dean emeritus.

"He had one of the sharpest minds I've ever encountered in all my years of instruction," said Anderson. "His success is no less than what I expected him to accomplish."

Kittlitz still serves DuPont as a statistical consultant.

"The engineer and I talk and send e-mails regarding the data he needs to analyze," he said. "I can do it from my home office as I listen to classical music in the background and watch the jack rabbits in my front yard."

Kittlitz lives in Alpine, Texas. To teach courses at Sul Ross State University there, he enrolled in a distance-learning course at the Universi-

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'He had one of the sharpest minds I've ever encountered in all my years of instruction.'—Dr. Frank Anderson

Retired chemical engineering professor remembered for 15 years of dedication

Dr. Raymond Richard Stasiak, 84, died Oct. 27 at his residence in Oxford.

Following a 30-year stint in the U.S. Air Force, Stasiak taught from 1978 to 1993 as an associate professor of chemical engineering at Ole Miss. During his tenure, he also was an assistant to the chair of chemical engineering and later taught an ethics course for senior civil engineering majors.

"I had an unusually good opportunity to work with him closely," said Dr. Frank Anderson, retired chair and professor emeritus of chemical engineering. "He worked well, was reliable and enjoyed the respect of his associates."

A disabled World War II veteran, Stasiak held two patents in the U.S. Air Force and was awarded the Meritorious Civilian Award. He was a past commander of the VFW, past president of the Lions Club and a member of the Rotary Club.

He also was a member of the American Institute of Chemical Engineers, American Chemical Society, Phi Delta Kappa and the university's Woods Order (an alumni donor club). He earned both his bachelor's and doctoral degrees from UM in 1943 and 1984, respectively. He also held an MBA and master's degree in engineering from the University of Dayton.

Survivors include his wife, Helen; two daughters, Katherine Hankins of Omaha, Neb., and Nancy Carden of Coronado, Calif.; and five grandchildren.

Memorials may be made to the Dr. Raymond Stasiak Scholarship Fund, Chemical Engineering Department, 134 Anderson, University, MS 38677.—*Edwin Smith*

Former chemical engineering professor dies Nov. 11 in Alabama hospital

Dr. Hubert "Ted" Huddleston Jr., a former chemical engineering professor at UM, died Nov. 11 at an Alabama hospital.

Huddleston, 66, was chair and professor of chemical engineering at the University of South Alabama in Mobile at the time of his death.

A native of Centreville, Ala., Huddleston earned his bachelor's degree in chemical engineering from UM in 1961. After earning his master's and doctoral degrees from the Case Institute of Technology, he returned to Ole Miss, where he taught from 1967 to 1981. His field of specialization was systems engineering.

"I knew him over the years as a student and a colleague," said Dr. Russell Aven, UM professor emeritus of chemical engineering. "He was truly a wonderful person who served faithfully as both a deacon and the organist for our church during his time here in Oxford."

Huddleston also worked on a NASA project in 1975 to develop concepts for a lunar mining base and human colony in high earth orbit. He lectured on the concept at Ole Miss, and also gave presentations on wine, one of his hobbies.

A member of Phi Kappa Phi, he was a problem writer and reviewer for the Fundamentals of Engineering examination, prepared and administered by the National Council of Examiners for Engineering and Surveying.

He is survived by his wife, the former Jean Rankin; and two sons, Brian and Bradley.—Edwin Smith

Engineering alum, continued from Page 21

ty of Alabama-Huntsville to earn a Master of Science in engineering in 2003. He also chairs the Alpine Parks and Recreation Board.

"The thing I love most about living in Alpine is that the summers are pleasant and the winters are mild," he said. "I enjoy hiking at Big Bend National Park, which is about 80 miles from here."

Kittlitz has four adult children. His son began attending Ole Miss but chose a career instead.

"The main thing is that he found something he enjoys doing," said Kittlitz. "When you get down to it, that's all that really matters."

All things considered, Kittlitz should know.—*Edwin Smith*

Geology students win prestigious international scholarship

2000 scholarship winner Amanda Patterson is an instructor in geological engineering at Radford University.

2003 scholarship winner Matt Sleep is pursuing a master's degree at Virginia Tech as a Via Fellow.

2005 scholarship winner Natalie Rose is a part-time teacher's assistant.

Students from UM's School of Engineering have received the Society of Mining, Metallurgy and Exploration division scholarship three of the past five years.

The $1,500 Mining and Exploration Division Scholarship Award is given annually to only four students worldwide who are pursuing careers in the minerals industry. A committee chooses them based on a combination of academic promise and need.

"These are extremely prestigious awards," said Dr. Richard Major, chair of geology and geological engineering. "Since the year 2000, only 24 of these scholarships have been awarded worldwide, and three of the recipients were students in our department."

Only one student can be nominated by the department chair each year. The student must be a SMME member majoring in mining, geology or another field covered by the mining and exploration division's technical unit.

UM's latest scholarship winner is senior Natalie Rose, who wants to earn a master's degree in geological engineering.

"This award is one of the highest awards given in my field," said Rose. "The fact that three Ole Miss students have been selected for this award in the last five years is a testament to the high educational standards of our geology and geological engineering department."

Rose, who works as a part-time teacher's assistant, is a Taylor Medal winner and a member of Phi Kappa Phi and Tau Beta Pi honor societies.

"Not only is it prestigious to be selected nationally, but it is the highest honor to be recommended by my own department," Rose said.

Her sentiment is echoed by Matt Sleep, who won the scholarship in 2003.

"Winning was nice because it was a way of reaffirming that I was doing well in school, that the work I put into studying paid off," said Sleep, who graduated from Ole Miss in 2004.

Sleep is working on his master's degree in geotechnical engineering at Virginia Tech, where he is a Via Fellow. He also works as an on-call consultant for AMEC Earth and Environmental in Nashville when

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> ***'The fact that three Ole Miss students have been selected for this award in the last five years is a testament to the high educational standards of our geology and geological engineering department.'***
>
> ***—Natalie Rose***

ME seniors see their projects put to work in factories across north Mississippi

For many seniors, the final project or thesis is an esoteric work that—once completed, turned in and graded—is often forgotten.

But mechanical engineering students are a different sort of senior. Several of their projects, turned in before graduation in May, will be put to use by the corporations that helped pay for the students' research. Dr. J.P. Sharma has been working with north Mississippi industries for more than a decade to fuel these student-business partnerships.

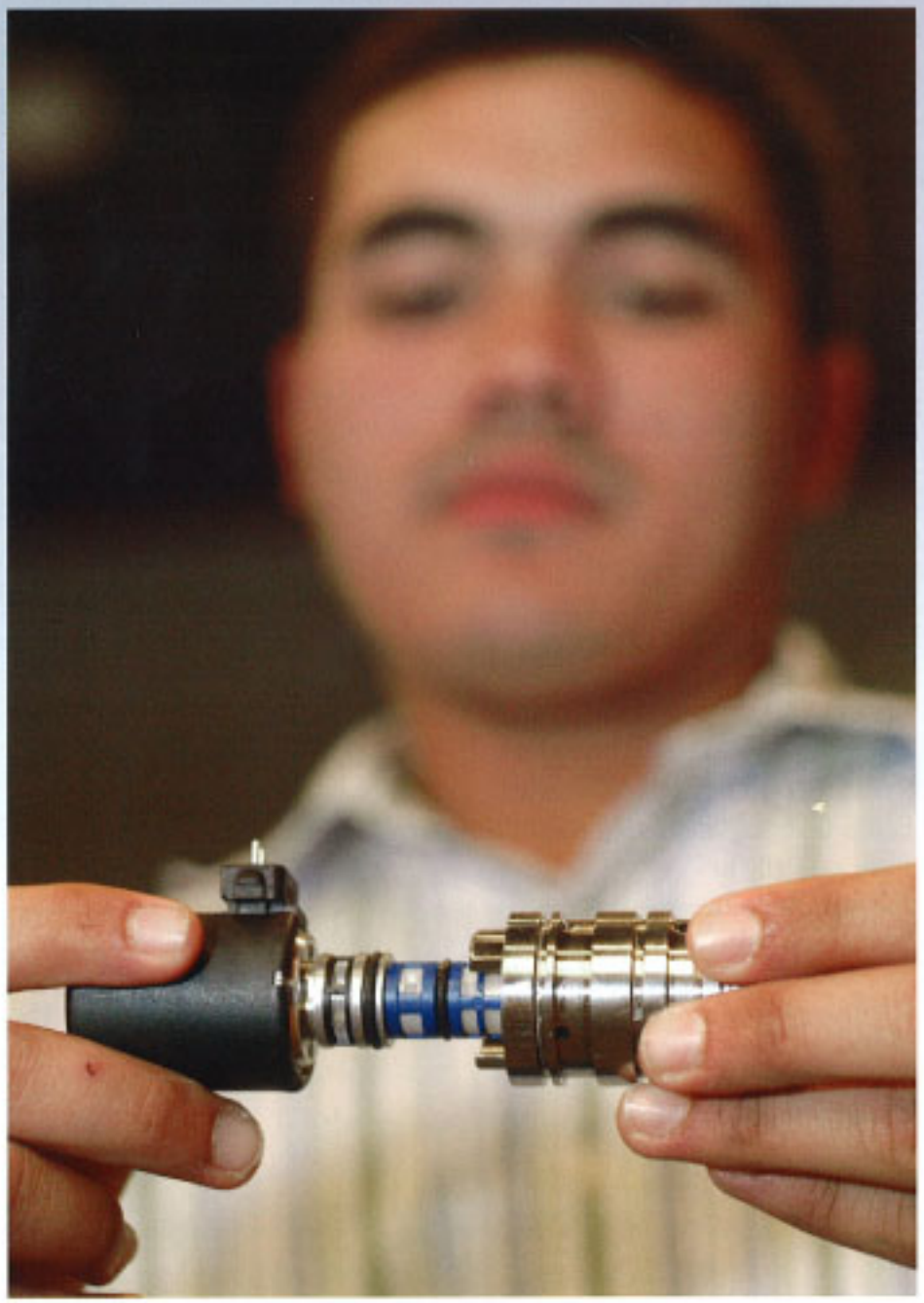
'The old metal clip Caterpillar was using lasted only six cycles and cost 25 cents to replace. Our way lasts 20 cycles and costs 11 cents.'

—Andrew Whalen

Andrew Whalen of Jackson and Alex Teoh of Panang, Malaysia, designed "Little Beaver," a clip with "teeth" that grips the inside of a nut to keep it from sliding up. The nut in question is part of a coupling on Caterpillar tractors manufactured here in Mississippi.

Whalen and Teoh came up with a plastic version of the clip strong enough to withstand a sulfuric acid bath, which is part of the manufacturing process. Seniors also perform a cost analysis on their projects.

"The old metal clip Caterpillar was using lasted only six cycles and cost 25 cents to replace," Whalen said. "Our way lasts 20 cycles and costs 11 cents."



Shaun Sockwell's new solenoid nest

At Parker-Hannifin in Batesville, the air conditioning manufacturing group needed a device on the factory floor that could quickly distinguish between four similar-looking but differently purposed parts for the units. ME seniors Mark Pharis and Josh Jeanson designed a device, a quality helicoil sensor, that could tell the difference.

Sockwell (right) tells engineering Dean Kai-Fong Lee how his solenoid nest works.

"They had a person doing it by hand, but there were too many mistakes," Pharis said. "Parker-Hannifin told us they wanted us to design this to be floor-ready. They are going to start using this in their factory as soon as we are through."

B.J. Lindsey and John Walker cut 40 minutes off the unloading time for huge metal coils of different sizes used at the Caterpillar factory. They designed a new stacking system that uses industrial-strength nylon straps to pick up the particular coil needed from above, rather than having to move an entire row of coils with a forklift to get to the one needed.

Borge-Warner, an automotive parts plant in Water Valley, liked Shaun Sockwell's design project so much that the factory started using it before Sockwell had even turned it in for a grade. Sockwell designed a new solenoid nest for Ford parts. The "nest" is what the factory had been using to test the solenoids to make sure they were working correctly.

But the factory's version was bored by hand, had difficult angles and sometimes stuck, slowing down work. Sockwell redesigned the solenoid nest, making it longer and the angles less sharp, using computer-assisted design software. He took the design to a machine shop in Water Valley, had a couple manufactured and took them to the plant.

Borge-Warner tested Sockwell's smoother nest and found it saved them one hour and 45 minutes in production time. They manufactured six more of them and put them to use immediately.

"Usually, we're always pleased with the design projects our seniors present to us. They show a lot of ingenuity," said Dr. Jeff Roux, chair of mechanical engineering. "But we're especially pleased when those projects are implemented by the companies who sponsor them. It says a lot about the quality of our undergraduates that their designs work in the real world."—*Angela Moore Atkins*

Mining scholarships, continued from Page 23

he's not spending his free time outdoors, mountain biking and hiking.

Being outdoors was one reason Amanda Patterson, who won the scholarship in 2000, was attracted to geological engineering.

"I chose to go to Ole Miss because I thought geological engineering sounded like a fun and challenging program, which I later found to be true," Patterson said. "The discipline involves not only the typical rigor of engineering course work but also the enjoyable distinction of learning outdoors and from field experiences."

Patterson, who is still working on her master's degree at Ole Miss, is an instructor in geological engineering at Radford University in Virginia. When finished, she hopes to earn a Ph.D. to further her teaching career.

Major is pleased with the success of all three SMME Mining and Exploration Division Scholarship Award recipients.

"This is the sort of thing that puts our department 'on the map,'" he said.—*Emilie Bramlett*

Rocket science, continued from Page 19

though his days are full with research and meetings, he has not forgotten the people who helped him at Ole Miss.

"My degree from Ole Miss has been instrumental in opening doors to new challenges and opportunities," Rodriguez said.—*Emilie Bramlett*

Geoinformatics Center helps steer, create state's alert system

The Mississippi Office of Homeland Security, in partnership with The University of Mississippi, has launched a program to implement a secure statewide alert system for emergency responders by summer 2006.

The program, announced by Gov. Haley Barbour and the Mississippi Office of Homeland Security, will create an alert system that broadcasts digital text messages through FM frequencies to emergency responders during crises. Global Security Systems Network (GSS-NET), a Mississippi-based company, has been awarded a $1.5 million contract to develop the system.

Funded by a Homeland Security grant, the project is being managed by the Geoinformatics Center in UM's School of Engineering.

"We are responsible for ensuring the system works and covers the whole state," said center director Dr. Greg Easson, also associate professor of geology and geological engineering.

The project's goal is to provide a system that will work "no matter what happens," said Easson, referring to communications failures during 9/11 attacks and recent Gulf Coast hurricanes.

"When the attacks on the World Trade Center in 2001 took place, there was no way to let responders know the buildings were going to come down," Barbour said. "Radios were clogged with traffic, cell phones didn't work and it was immediately apparent that a new means of emergency communications needed to be developed."

The system being developed by GSS would allow a text message to be sent via FM radio signal to designated individuals or to geographic areas, Easson said. The message could be sent from unaffected areas and received by end users in the field on cell phones, pagers or other digital devices.

"It is critical that Mississippi develop this project since many areas have limited alert coverage and are vulnerable to natural disasters," said Mississippi Homeland Security Director Edwin L. Worthington.

"Our ability to communicate throughout the state during active emergencies is critical," Worthington said. "This became clearly apparent during Hurricane Katrina when cell phones and radio communications were disrupted."

GSS has developed a chip that can be inserted into pagers, cell phones, PDAs and other devices to alert responders and provide vital information as situations develop.

GSS President Robert L. Adams said two communications issues emerged from the Katrina disaster.

"One was clearly the communications between first responders, FEMA and ordinary citizens once engaged on site or coordinating targeted activities using different communication systems," Adams said. "The second was the alert system itself and its limitations and vulnerabilities."

GSS is using its expertise and experience with single point-to-multipoint messaging to help address the needs of a digital Emergency Alert Network.

Mississippi Public Broadcasting is allowing use of its tower network as the backbone of the alert system to facilitate thorough coverage of the state.

"Its towers didn't blow down during Katrina," Easson said. "They lost power, but they remained standing and were soon operational once power was restored or generators were put in place."

Some Mississippi counties already want to buy receiving devices for all their citizens, he said, and the technology may be made available to the general public.

> ***'It is critical that Mississippi develop this project since many areas have limited alert coverage and are vulnerable to natural disasters.'***
>
> ***—Edwin L. Worthington, Mississippi Homeland Security Director***

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